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US005774874A

# United States Patent [19]

Veeneman et al.

[11] Patent Number: **5,774,874**  
 [45] Date of Patent: **Jun. 30, 1998**

[54] **MULTI-MERCHANT GIFT REGISTRY**[75] Inventors: **William J. Veeneman**, Minneapolis;  
**Barbara Thomas**, Chanhassen; **Debra Remington**, Hopkins, all of Minn.[73] Assignee: **The Gift Certificate Center**,  
Minneapolis, Minn.[21] Appl. No.: **562,014**[22] Filed: **Nov. 22, 1995****Related U.S. Application Data**[63] Continuation-in-part of Ser. No. 132,604, Oct. 6, 1993,  
abandoned, which is a continuation-in-part of Ser. No.  
62,470, May 14, 1993, abandoned.[51] Int. Cl.<sup>6</sup> ..... **G06F 17/60**[52] U.S. Cl. .... **705/27; 705/14**[58] Field of Search ..... **395/227, 226,**  
**395/228, 229, 218, 214, 201; 705/27, 26,**  
**28, 29, 18, 14, 1**[56] **References Cited****U.S. PATENT DOCUMENTS**

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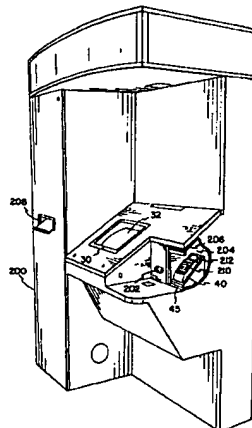
Primary Examiner—Donald E. McElheny, Jr.

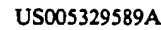
Attorney, Agent, or Firm—Patterson &amp; Keough, P.A.

## [57]

**ABSTRACT**

The present invention provides a system for registering items selected by a registrant from a plurality of participating merchants for subsequent communication to a prospective purchaser. The system has a computer system that contains identifying information about the registrant. A portable input and storage device is provided that can be carried by the registrant into a plurality of participating stores. The portable input and storage device is capable of receiving and storing information regarding gifts that the registrant desires to receive as presents. The input and storage device stores a unique identifier for the particular merchant each desired gift is from. A transfer device is provided connected to the computer system that receives the information regarding the registrant's desired gifts from the portable input and storage device and transfers the information to the computer system. Finally, a prospective purchaser interface device is provided that allows the prospective purchaser to view, sort or print a list of the gifts desired by the registrant and which particular merchant those gifts are from.

**14 Claims, 20 Drawing Sheets**



[11] Patent Number: 5,329,589

[45] **Date of Patent:** Jul. 12, 1994

- 88/10467 12/1988 World Int. Prop. O. .... G06F 7/08

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**Primary Examiner—Curtis Kuntz**  
**Assistant Examiner—Jason Chan**  
**Attorney, Agent, or Firm—Gordon E. Nelson**

[57] **ABSTRACT**

Methods and apparatus for employing a communications system with actively connects communicating entities to mediate transactions. Disclosed are general methods and apparatus for mediating transactions, methods and apparatus permitting information from one transaction to be used in other transactions, and methods and apparatus for performing credit card transactions in which the vendee need not disclose his credit card to the vendor. An implementation of a system for performing credit card transactions in a stored program-controlled telephone switching network is also disclosed.

[63] Continuation of Ser. No. 661,711, Feb. 27, 1991, abandoned.

[51] Int. Cl.<sup>5</sup> ..... H04M 11/04; G06F 15/22

[52] U.S. Cl. .... 379/91; 379/93;  
379/95; 364/401; 364/408

[58] Field of Search ..... 379/91, 92, 93, 95,  
379/96, 97, 98, 143, 144, 201; 402/8, 22, 24;  
364/401, 408; 325/379, 380, 381

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**28 Claims, 4 Drawing Sheets**





US005250789A

# United States Patent [19]

Johnsen

[11] Patent Number: 5,250,789  
[45] Date of Patent: Oct. 5, 1993

## [54] SHOPPING CART

[76] Inventor: Edward L. Johnsen, Five Bent Ave., Wayland, Mass. 01778

[21] Appl. No.: 786,051

[22] Filed: Oct. 31, 1991

[51] Int. Cl.<sup>3</sup> ..... G06F 15/24

[52] U.S. Cl. .... 235/383; 235/385; 235/462; 364/401

[58] Field of Search ..... 340/825.35, 825.49; 364/401, 402, 403; 235/375, 383, 385, 462; 186/61, 62; 194/905

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Primary Examiner—Constantine Hannaher

Assistant Examiner—Edward J. Glick

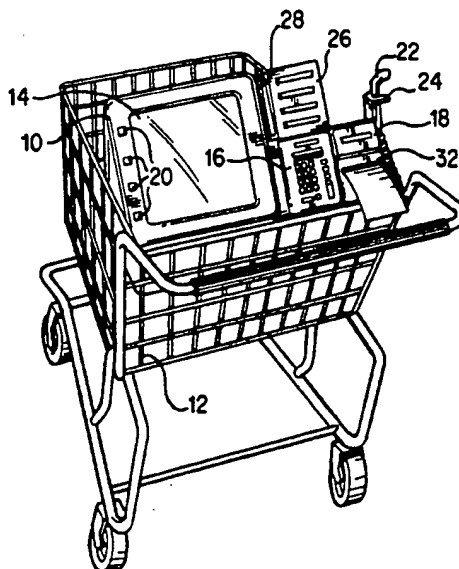
Attorney, Agent, or Firm—Robert M. Asher

## [57]

## ABSTRACT

A shopping display system for organizing a shopping list in accordance with the locations of products in a store and for displaying promotions in response to a product being scanned by a product scanner. The shopping list may be generated with the assistance of a cash register tape bearing the product bar codes associated with the purchased products. The product scanner is mounted on a shopping cart so that promotions are issued in response to the products while the shopper is in the middle of the shopping visit. This system includes a display mounted on the shopping cart and a product code scanner. The system may also be provided with a disk drive, keypad and wireless communications.

22 Claims, 7 Drawing Sheets





US005243174A

**United States Patent** [19][11] **Patent Number:** **5,243,174**

Veeneman et al.

[45] **Date of Patent:** **Sep. 7, 1993****[54] METHOD AND APPARATUS FOR GENERATING GIFT CERTIFICATES**

**[75] Inventors:** William J. Veeneman; Thomas J. Doyle, both of Minneapolis; Karla J. Alexander, Minnetonka; Robert H. Hamilton, Edina, all of Minn.

**[73] Assignee:** The Gift Certificate Center, Inc., Minneapolis, Minn.

**[21] Appl. No.:** 664,930

**[22] Filed:** Mar. 5, 1991

**[51] Int. Cl.<sup>5</sup>** ..... G06F 7/08

**[52] U.S. Cl.** ..... 235/381; 364/479; 902/30

**[58] Field of Search** ..... 235/379, 381, 382, 383; 364/408, 479; 902/18, 30, 21-23, 41

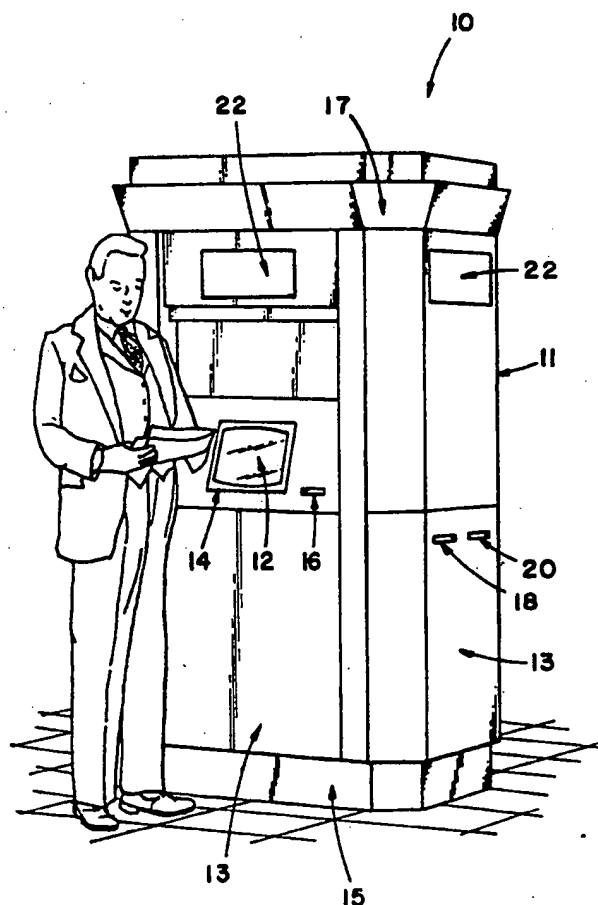
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*Primary Examiner*—John Shepperd  
*Assistant Examiner*—Edward H. Sikorski  
*Attorney, Agent, or Firm*—Merchant, Gould, Smith, Edell, Welter & Schmidt

**[57] ABSTRACT**

An electronic gift certificate dispenser device for printing and dispensing a gift certificate purchased by a credit card. A consumer approaches the device and inserts a credit card into a magnetic card reader. The consumer chooses a retailer from a menu of participating retailers and enters the gift certificate value. The machine automatically verifies the credit card, causes the account to be debited and prints the gift certificate. A plurality of gift certificate dispensing devices can be connected in a network under the control of a central processing unit. Information regarding gift certificate purchases is transferred from the devices to the central processing unit to be collated and billed to credit card accounts. The central processing unit also informs merchants of the purchase of gift certificates that will be redeemed at their stores.

**14 Claims, 18 Drawing Sheets**



US005208445A

**United States Patent** [19]

Nahar et al.

[11] Patent Number: **5,208,445**[45] Date of Patent: **May 4, 1993**

[54] **METHOD AND APPARATUS FOR RECEIVING, MARKING AND RETAINING DISCOUNT COUPONS**

[75] Inventors: **Rathindra Nahar; Barry M. Mergenthaler**, both of Cambridge, Ohio

[73] Assignee: **NCR Corporation**, Dayton, Ohio

[21] Appl. No.: **750,161**

[22] Filed: **Aug. 26, 1991**

[51] Int. Cl.<sup>5</sup> ..... **G06K 15/00; G06F 15/21**

[52] U.S. Cl. .... **235/375; 255/383; 364/401; 194/208**

[58] Field of Search ..... **235/375, 383, 432; 364/401; 194/208; 101/235**

[56] **References Cited****U.S. PATENT DOCUMENTS**

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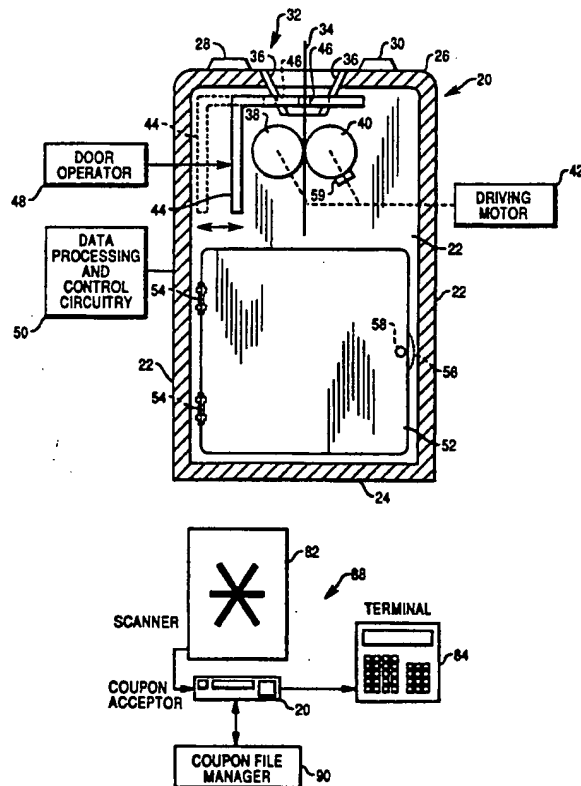
*Primary Examiner*—John Shepperd

*Attorney, Agent, or Firm*—Albert L. Sessler, Jr.

[57] **ABSTRACT**

A method and apparatus for handling discount coupons includes a scanner, a point of sale terminal and a coupon acceptor. In one embodiment, a coupon file manager is also included. The coupon acceptor receives coupons which have been determined to be genuine and properly related to goods being purchased. The coupons are inserted into an opening in the acceptor and are then drawn into the acceptor by a pair of aligned counter-rotating cylinders. The coupons are also marked within the acceptor to indicate that they have been used. The coupon acceptor provides a secure structure so that coupons cannot be removed therefrom except by an authorized person.

**49 Claims, 8 Drawing Sheets**





US005192854A

**United States Patent** [19][11] **Patent Number:** 5,192,854**Counts**[45] **Date of Patent:** Mar. 9, 1993[54] **SYSTEM FOR ELECTRONICALLY  
RECORDING AND REDEEMING COUPONS**[76] **Inventor:** Reginald D. Counts, 1714 Legend  
La., St. Louis, Mo. 63146[21] **Appl. No.:** 829,561[22] **Filed:** Feb. 5, 1992**Related U.S. Application Data**

[63] Continuation of Ser. No. 558,775, Jul. 26, 1990, abandoned.

[51] **Int. Cl.<sup>3</sup>** ..... G06F 7/20; G06F 15/74[52] **U.S. Cl.** ..... 235/375; 235/381[58] **Field of Search** ..... 235/375, 376, 381, 382,  
235/383, 385, 472; 364/402, 404, 405[56] **References Cited****U.S. PATENT DOCUMENTS**

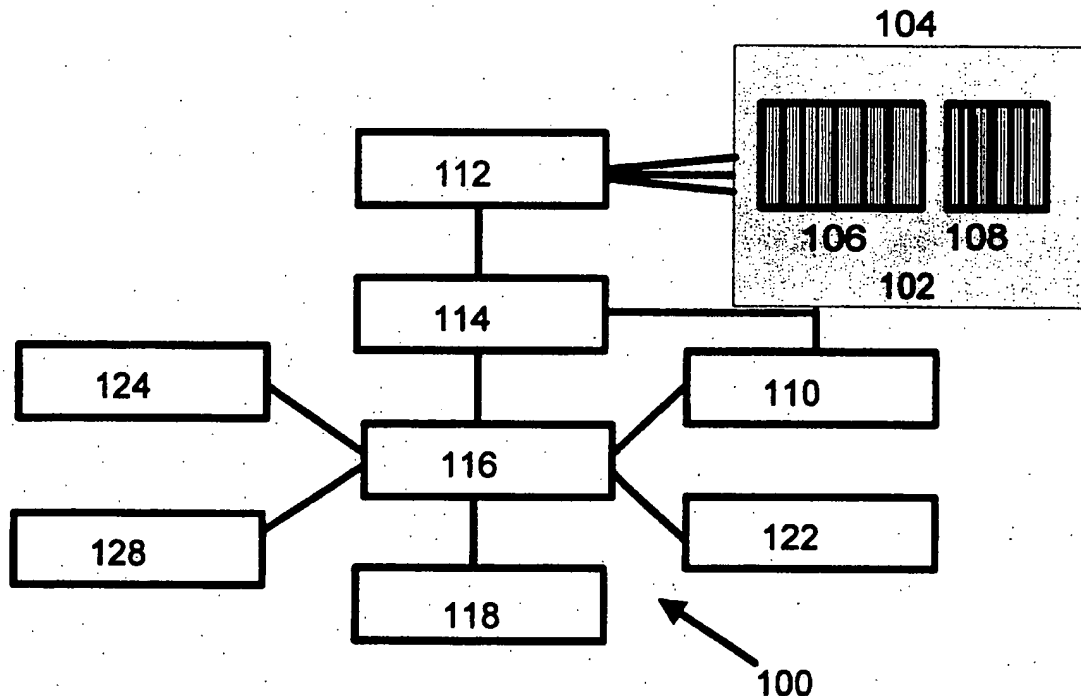
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**Primary Examiner**—John W. Shepperd**Assistant Examiner**—Edward H. Sikorski**Attorney, Agent, or Firm**—Longacre & White[57] **ABSTRACT**

An electronic coupon system handles coupons selected by a customer. The coupons have a product code of the product covered by the coupon and have a corresponding coupon code representing information relating to the value of the coupon. A coupon scanner used by the customer scans the coupons and has a memory for storing data representing the scanned product codes and their corresponding coupon codes. A product scanner at a retail store scans product codes of products to be purchased and provides data representing the scanned codes. A processor credits to the customer the value of the coupon when the data representing the scanned codes corresponds to the data in the coupon scanner memory. The system may also include a kiosk having a processor interfacing with the coupon scanner for providing to the scanner additional data and for providing to the kiosk information stored in the coupon scanner.

**3 Claims, 10 Drawing Sheets**



US005160171A

**United States Patent** [19]

Gregory et al.

[11] **Patent Number:** **5,160,171**[45] **Date of Patent:** **Nov. 3, 1992**[54] **SECURITY CODING**[75] **Inventors:** **Peter Gregory, Bolton; Arthur Quayle, Holcombe Brook, both of England**[73] **Assignee:** **Imperial Chemical Industries PLC, London, England**[21] **Appl. No.:** **652,260**[22] **Filed:** **Feb. 6, 1991****Related U.S. Application Data**

[63] Continuation of Ser. No. 332,597, Apr. 3, 1989, abandoned.

[30] **Foreign Application Priority Data**Apr. 5, 1988 [GB] United Kingdom ..... 8807937  
Oct. 17, 1988 [GB] United Kingdom ..... 8824293[51] **Int. Cl.<sup>5</sup>** ..... **B42D 15/00**[52] **U.S. Cl.** ..... **283/91; 283/94; 427/7; 427/145; 427/160; 427/288**[58] **Field of Search** ..... **427/7, 160, 288, 145; 283/91, 88**[56] **References Cited****U.S. PATENT DOCUMENTS**3,933,094 1/1976 Murphy et al. .... 283/74  
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4,627,819 12/1986 Burrows ..... 283/88  
4,663,518 5/1987 Borror et al. .... 283/77**FOREIGN PATENT DOCUMENTS**1178321 1/1970 United Kingdom .  
2090194 7/1982 United Kingdom .**OTHER PUBLICATIONS**

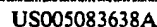
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*Primary Examiner*—Janyce Bell*Attorney, Agent, or Firm*—Cushman, Darby & Cushman[57] **ABSTRACT**

A method of security coding an article which comprises applying to the article an identification mark comprising at least one colorless or weakly-colored infra-red absorbing material and an article carrying one or more identification codes applied according to the method. The method is suitable for marking documents, currency and equivalents, such as cheques, credit cards and tickets, and for the identification of copyright materials and high valued added goods, such as tapes, cassettes, books, films, cameras, perfumes, spirits and designer goods to inhibit counterfeiting.

**13 Claims, No Drawings**





## Schneider

[11] Patent Number: 5,083,638

**[45] Date of Patent: Jan. 28, 1992**

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*Primary Examiner—F. J. Bartuska*

[21] Appl. No.: 584,104

[57]                      **ABSTRACT**

[22] Filed: Sep. 18, 1990

[51] Int. Cl.<sup>5</sup> ..... A47F 9/04; G01G 19/413

[52] U.S. Cl. .... 186/61; 177/25.15;  
235/383

[58] Field of Search ..... 186/61; 235/383;  
364/466; 177/25.15, 50

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An automated retail point-of-sale machine is disclosed having the ability to allow consumers to check out their purchases with a minimal of direct human assistance. The machine is designed to work with products whether labelled or not with machine readable bar codes. The machine possess security features which deter customers from fraudulently bagging items by comparing the weight changes on the packing scale with the product number related information in the case of labelled products. In the case of nonlabelled products, experienced customers can identify the product through a series of menu choices while beginner customers can allow the supervisory employee to enter a product number abbreviated code, with additional visual and/or dimensional sensory information of the contents being relayed to a supervisory employee. The machine allows high shopper efficiency by minimizing customer handling of products by positioning the packing scale adjacent to the scanner and typically not requiring further handling of the purchased items until checkout is completed.

**13 Claims, 7 Drawing Sheets**



# United States Patent [19]

Bianco

[11] Patent Number: 5,047,614

[45] Date of Patent: Sep. 10, 1991

[54] **METHOD AND APPARATUS FOR  
COMPUTER-AIDED SHOPPING**

[76] Inventor: James S. Bianco, 217 Brainard Rd.,  
Enfield, Conn. 06082

[21] Appl. No.: 391,733

[22] Filed: Aug. 8, 1989

**Related U.S. Application Data**

[63] Continuation-in-part of Ser. No. 300,352, Jan. 23, 1989,  
abandoned.

[51] Int. Cl.<sup>5</sup> ..... G06F 15/24; G06F 15/26

[52] U.S. Cl. .... 235/385; 235/382;  
235/462; 235/472

[58] Field of Search ..... 235/385, 382, 462, 472,  
235/383; 379/95

[56] **References Cited**

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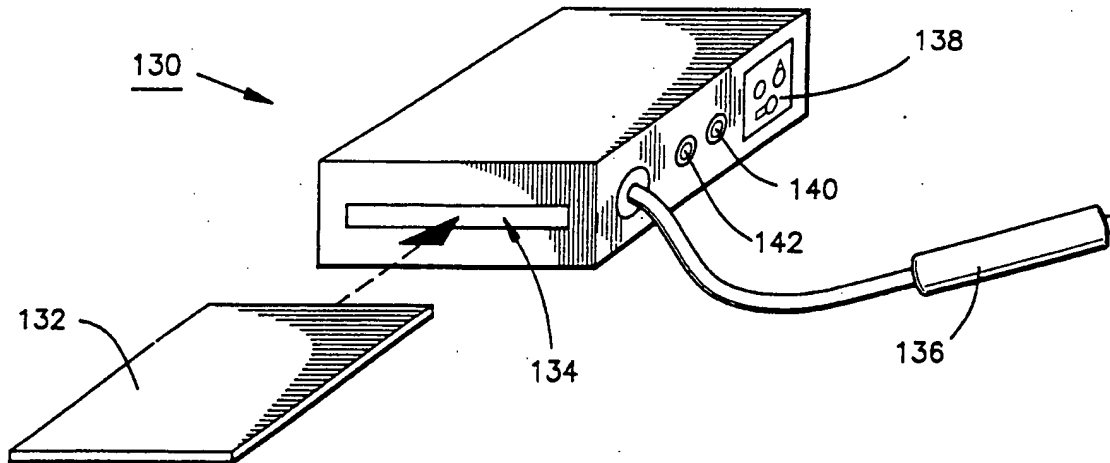
*Primary Examiner*—Harold Pitts

*Attorney, Agent, or Firm*—John H. Crozier

[57] **ABSTRACT**

In a preferred embodiment, a method and means to aid shopping which includes the use by a consumer of a portable bar code scanner having an electronic memory. The consumer enters desired items into the memory by scanning bar codes on, for example, containers, coupons, advertisements, and pamphlets furnished by a store. The memory is then read by a store terminal which may compile a printed shopping list and/or may transmit the order to a warehouse environment for manual and/or automatic order picking. The memory may be read by the store terminal over a telephone line via a modem.

**17 Claims, 5 Drawing Sheets**



**United States Patent** [19]  
**Gombrich**

[11] **Patent Number:** **4,916,441**  
[45] **Date of Patent:** **Apr. 10, 1990**

[54] **PORTABLE HANDHELD TERMINAL**

[75] **Inventor:** Peter P. Gombrich, Boulder, Colo.

[73] **Assignee:** CliniCom Incorporated, Boulder, Colo.

[21] **Appl. No.:** 246,520

[22] **Filed:** Sep. 19, 1988

[51] **Int. Cl.<sup>4</sup>** ..... H04Q 1/00; G06F 15/06

[52] **U.S. Cl.** ..... 340/712; 341/22;  
341/23; 340/825.300; 340/825.440; 364/709.11;  
364/200; 235/380; 235/382; 235/462; 235/472;  
455/89

[58] **Field of Search** ..... 235/380, 382, 385, 454,  
235/462, 472; 364/705.1, 706, 707, 708, 709.01,  
709.06, 709.11, 709.12, 413.02, 200 MS File,  
900 MS File; 340/825.3, 825.31, 825.44, 712,  
711, 706; 341/20, 22, 23; 178/18, 19; 455/89,  
90, 95

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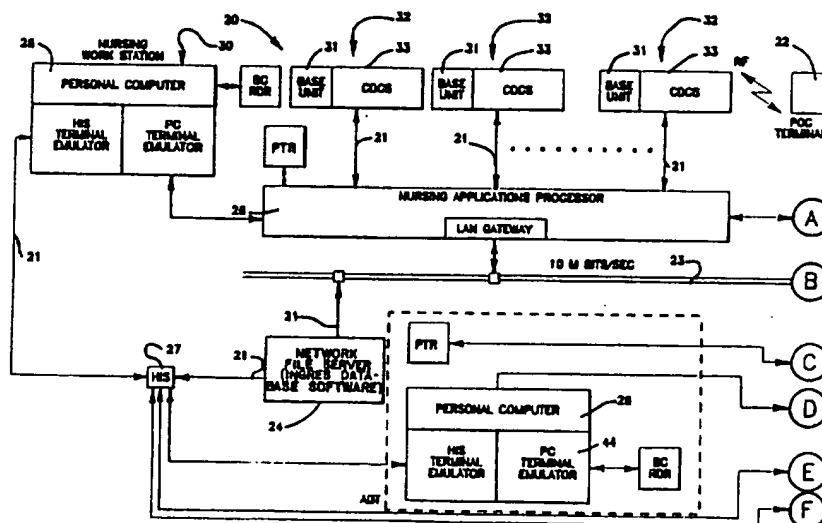
(List continued on next page.)

**Primary Examiner**—Donald J. Yusko  
**Assistant Examiner**—E. O. Pudup  
**Attorney, Agent, or Firm**—Merchant, Gould, Smith, Edell, Welter & Schmidt

[57] **ABSTRACT**

A handheld pocket terminal (22) having a display screen (40) and a bar code reader (42).

13 Claims, 9 Drawing Sheets



**United States Patent** [19]  
**Small**

[11] **Patent Number:** 4,815,741  
[45] **Date of Patent:** \* Mar. 28, 1989

[54] **AUTOMATED MARKETING AND GAMING SYSTEMS**

[76] **Inventor:** Maynard E. Small, 105 Ward Pkwy., Apt. 507, Kansas City, Mo. 64112

[\*] **Notice:** The portion of the term of this patent subsequent to Jun. 2, 2004 has been disclaimed.

[21] **Appl. No.:** 34,282

[22] **Filed:** Apr. 2, 1987

**Related U.S. Application Data**

[63] Continuation-in-part of Ser. No. 668,011, Nov. 5, 1984, Pat. No. 4,669,730.

[51] **Int. Cl.<sup>4</sup>** ..... A63F 9/00

[52] **U.S. Cl.** ..... 273/138 A; 273/1 E

[58] **Field of Search** ..... 273/1 E, 85 G, 138 A, 273/DIG. 28; 364/410-412

[56] **References Cited**

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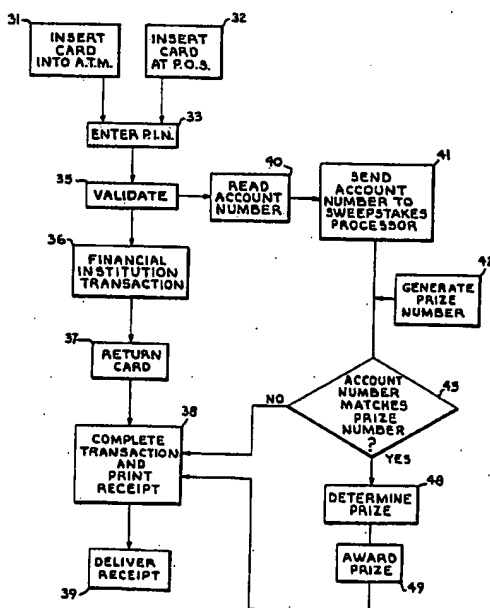
**Primary Examiner**—Maryann Lastova

**Attorney, Agent, or Firm**—Litman McMahon & Brown

[57] **ABSTRACT**

An apparatus and method for automated marketing and gaming wherein a player inserts an identification card into an automated remote interface device and accesses an account at a subject financial institution. The user identifier provides access to the financial account, and a user indicia is compared to a game indicia. In one form a sweepstakes processor compares the user and game indicia to determine whether a selected winning correlation is present between the game indicia and user indicia. The apparatus is adapted to be used with a network of data processing machines and a transmission facilities device, which provides data processing communication among the data processing machines. The processor can alternatively be in electronic communication with a government-associated lottery system to purchase lottery chances for distribution to users of the remote interface device. Further, the processor can be utilized to allow a user to purchase a lottery ticket electronically through a transfer of funds from the user's financial account to a lottery-type game account.

29 Claims, 4 Drawing Sheets



[54] CONTROL DEVICE FOR A VENDING MACHINE AND GIFT CERTIFICATE FOR USE THEREON

[75] Inventor: Yukichi Hayashi, Sakado, Japan

[73] Assignee: Kabushiki Kaisha Nippon Coinco, Tokyo, Japan

[21] Appl. No.: 16,972

[22] Filed: Feb. 26, 1987

Related U.S. Application Data

[63] Continuation of Ser. No. 721,573, Apr. 10, 1985, abandoned.

[30] Foreign Application Priority Data

Apr. 16, 1984 [JP] Japan ..... 59-75022

[51] Int. Cl.<sup>4</sup> ..... G07F 7/02

[52] U.S. Cl. .... 194/205; 194/207; 194/210; 194/214; 235/381; 364/479

[58] Field of Search ..... 194/210, 205, 214, 211, 194/207; 235/375, 380, 381; 364/479

[56] References Cited

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Primary Examiner—Joseph J. Rolla

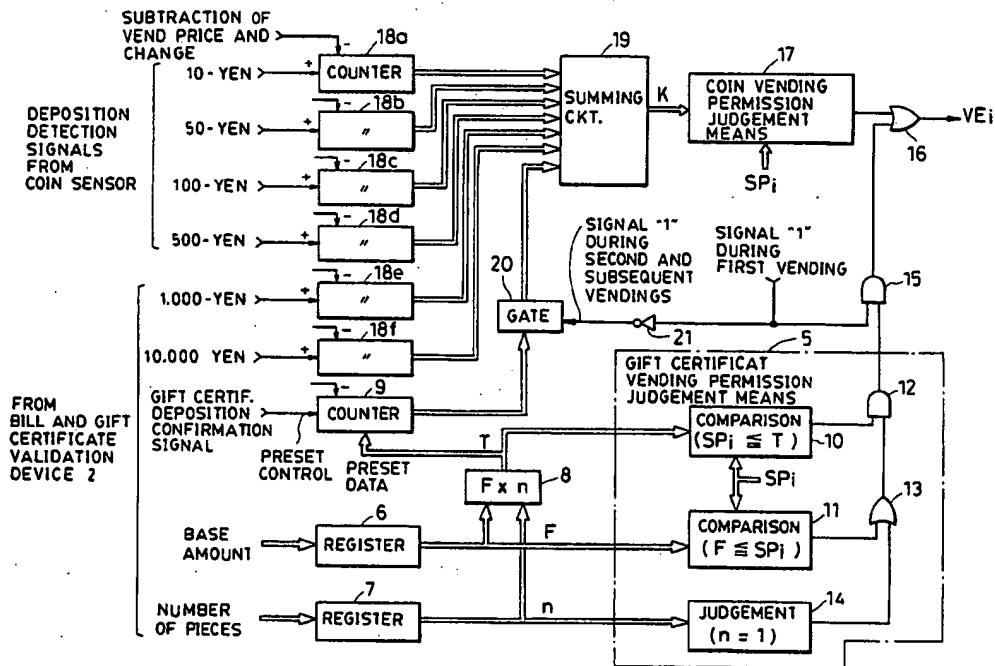
Assistant Examiner—Edward S. Ammeen

Attorney, Agent, or Firm—Spensley Horn Jubas & Lubitz

[57] ABSTRACT

This gift certificate has information recorded thereon for identifying a total face value vendible by the gift certificate and a predetermined base amount equal to or smaller than the total face value. The information recorded on a deposited gift certificate is read by a reading device. A validation device validates the total face value and the base amount of the deposited gift certificate in response to the read information. A vending permission judgement device prohibits, in response to an output of the validation device, at least vending of an article to which a vend price below the base amount has been assigned. By virtue of this arrangement, a purchaser of an article from a vending machine by using a gift certificate is not forced to make purchase of the entire total face value but has only to make purchase above the base amount in which case a change preferably is paid out.

7 Claims, 4 Drawing Sheets



**United States Patent** [19]  
**Shapiro**

[11] **Patent Number:** **4,720,785**  
[45] **Date of Patent:** **Jan. 19, 1988**

[54] **COMPUTER-ASSISTED SYSTEM FOR  
TICKETING MANAGEMENT**

[75] **Inventor:** Bernard Shapiro, Montclair, N.J.  
[73] **Assignee:** AI Computer Services, Inc., Fresh  
Meadow, N.Y.

[21] **Appl. No.:** 746,624

[22] **Filed:** Jun. 19, 1985

[51] **Int. Cl.<sup>4</sup>** ..... G06F 15/20

[52] **U.S. Cl.** ..... 364/401; 235/384;  
235/378

[58] **Field of Search** ..... 364/401, 406-408,  
364/467, 464, 900; 235/378, 384, 385

[56] **References Cited**

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*Primary Examiner*—Jerry Smith

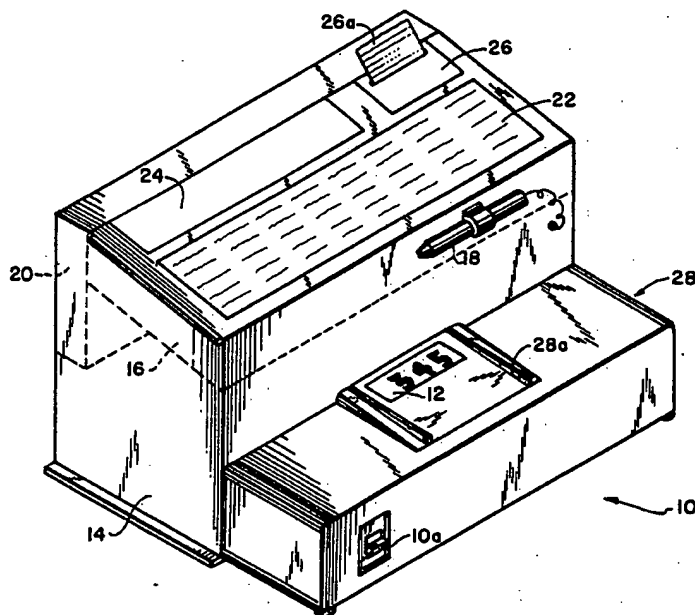
*Assistant Examiner*—Kim Thanh Tbui

*Attorney, Agent, or Firm*—Lilling & Greenspan

[57] **ABSTRACT**

A computer-assisted ticketing device, such as for garages, provides the necessary functions to allow check in and check out, computing the price, printing tickets, displaying appropriate information on a monitor and producing selected reports. The input to the system is produced by the reading of ticket information from specially designed tickets imprinted with bar code data. Additional information is entered into the system by reading bar code data representing, for example, the make of the vehicle, its color, the pricing schedule, etc. All the information is checked for validity and stored in the system's memory, including the time of day and date. System passwords may be used to prevent unauthorized access to the stored information or the unauthorized printing of reports.

**29 Claims, 16 Drawing Figures**





## [19]

Inoyama et al.

[11]

**Sep. 4, 1979**

[45]

**[54] VERSATILE AUTOMATIC TRANSACTION EQUIPMENT**

[75] Inventors: Tadao Inoyama, Yokohama; Kokichi Aomori, Tokyo; Hidekazu Terai, Kodaira, all of Japan

[73] Assignee: **Hitachi, Ltd., Japan**

[21] Appl. No.: 911,930

[22] Filed: Jun. 2, 1978

[30] Foreign Application Priority Data

Jun. 13, 1977 [JP] Japan ..... 52-68916

[51] Int. Cl.<sup>2</sup> ..... G06F 15/30; G07F 7/08;  
H04O 9/00

[52] U.S. Ct. .... 235/379; 235/381;  
364/200

[58] **Field of Search** ..... 235/379, 381;  
340/149 A: 364/200

[56] **References Cited**

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Attorney, Agent, or Firm—Craig and Antonelli

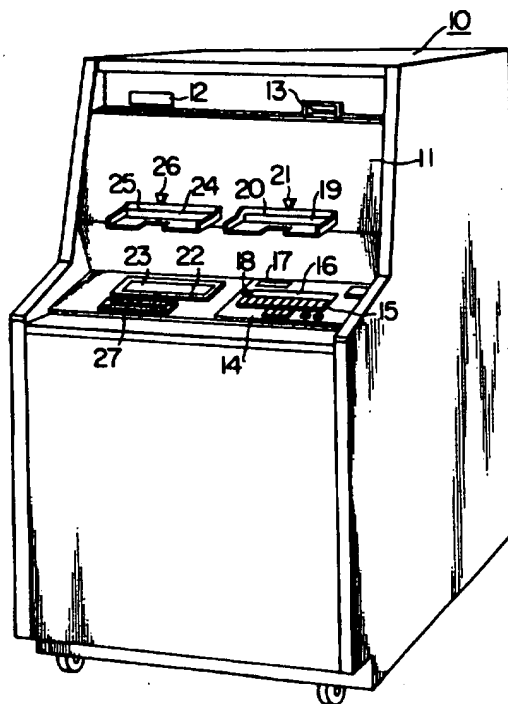
[57]

## ABSTRACT

**A versatile automatic transaction equipment comprises: a basic module including a user operation unit, an ID card processing unit, a transaction recording unit, and a cash delivery unit for cash payment transaction or verification of customer account balance; a deposit-receiving sub-module including a unit for identifying the type or class and authenticity of bill or bills inserted into the equipment for a deposit by a user and for counting the amount of money received as a deposit, and a bill transport unit for separately transporting the bills in two routes of rejection and receipt in accordance with the result of identification; and a passbook-processing sub-module including a magnetic data processing unit for reading and/or writing magnetic record data from the magnetic stripe attached to the passbook inserted by the user, and a printer unit for printing data representing the transaction history of the associated account. Each of the modules includes a control system having a programmable microprocessor and a terminal unit control circuit interconnected by an information bus, and an interface for inter-module data transfer.**

**7 Claims, 25 Drawing Figures**

**Primary Examiner—Daryl W. Cook**





[54] MARKING SYSTEM

[75] Inventors: Genlo R. Arciprete, Lexington;  
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[73] Assignee: Dennison Manufacturing Company,  
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[22] Filed: Feb. 10, 1972

[21] Appl. No.: 225,346

Related U.S. Application Data

[60] Division of Ser. No. 786,813, Dec. 9, 1968, which is  
a continuation of Ser. No. 681,765, Nov. 9, 1967,  
abandoned.

[52] U.S. Cl. .... 101/66, 101/90

[51] Int. Cl. .... B41I 45/00

[58] Field of Search. .... 101/66, 90

[56] References Cited

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Primary Examiner—Vincent P. Canney  
Attorney, Agent, or Firm—Donald Brown

[57] ABSTRACT

A system for marking both visually interpretable information and non-visually interpretable, but machine readable information on record bearing members, typically control tickets used for merchandise identification, classification and inventory control.

The system employs a marking machine that is capable of being controlled from a remote location in order to specify what is to be marked upon the tickets, as well as such auxiliary information as the number of tickets and the number of parts per ticket. Initially, the specified information is advantageously converted into electrical code signals that act upon the machine and its marking instrumentalities.

As the tickets are fed through the machine, visually interpretable information is imprinted upon each ticket at one marking station and non-visually interpretable, but machine readable information is

applied by magnetic recording at another marking station. The recorded information illustratively appears on one side of each ticket, without causing ticket disfiguration; a counterpart of at least a portion of that information is imprinted on the other side of the ticket.

The printing instrumentalities, desirably print wheels, are collectively settable from the remote location. For that purpose the print wheels are driven, upon command, in one direction of rotation to a re-set position. They are subsequently driven in the opposite direction of rotation to individual positions which are specified from the remote location.

In the case of magnetic recording, electrical interference between regular machine operations and the entry of recorded information on the tickets is reduced by the use of a timing mechanism. In addition, a linkage mechanism is used for the precise positioning of tickets and for controllably moving a recording unit into position. The correctness of the recorded information is verified at the remote location, and, upon a failure of verification, a reject marking unit is operated at the machine.

Illustratively, the recording takes place using serial signals applied in circular tracks to a coating of magnetic material on each ticket. Alternatively, the recording signals may be applied in parallel and linearly positioned on the coating of each ticket, despite non-linear feed, by coordinating the timing of the recording with the movement of the tickets.

Also disclosed is a unit for applying a color mark to the tickets, as prescribed at the remote location. The completed tickets are received by a collector which is also controllable from the remote location.

Additionally disclosed are various electronic logic networks that are used in the system to facilitate remote control of the machine. One of the networks is a divider which is set with binary code signals from the remote location to specify the number of parts per ticket. Where the number of parts is four or less, the divider takes the form of a gated two-stage register that receives a recurring pulse signal from the machine and produces an output in accordance with the number of parts desired. Another of the networks is a comparator that employs NAND logic for controlling the mechanical position of the color mark unit in accordance with code signals sent from the remote location.

4 Claims, 36 Drawing Figures

# United State

[11] 3,622,995

- [72] Inventors **Uselma C.**  
**Bloomfield Hills, Mich.;**  
**James E. Hopkins, Berwyn; Carl W.**  
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- [21] Appl. No. 809,277
- [22] Filed Mar. 21, 1969
- [45] Patented Nov. 23, 1971
- [73] Assignee **Burroughs Corporation**  
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Primary Examiner—John W. Caldwell  
 Assistant Examiner—Howard Cohen  
 Attorney—Carl Fissell, Jr.

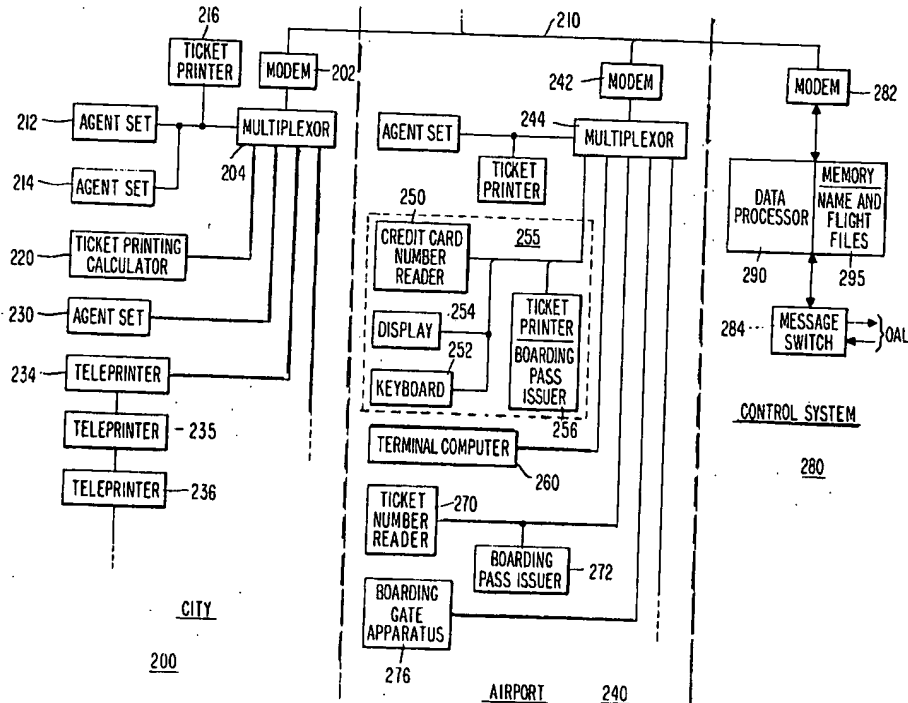
## [54] AUTOMATIC TICKET/CREDIT CARD CHECK-IN SYSTEM

16 Claims, 11 Drawing Figs.

- [52] U.S. Cl. 340/153,  
 179/2 CA, 235/61.7 R, 235/61.9 R, 340/149 A
- [51] Int. Cl. G07F 7/02
- [50] Field of Search 340/149,  
 149 A, 153, 147; 194/4; 235/61.7, 61.9; 179/2 CA

- [56] References Cited  
 UNITED STATES PATENTS  
 2,754,496 7/1956 Embry et al. 340/149

**ABSTRACT:** Data processing systems for automatic, on-line checking of numbered reservations and/or the control of credit card purchases, without referencing any data on the ticket or credit card itself. Such systems include a central processor, a remotely addressable central data store for reservation and customer account information, and remote terminal input apparatus, printer apparatus and ticket or card number reader apparatus. The remote terminal input apparatus includes ticket, credit card and freight bill number readers, in addition to keyboard input apparatus for on-line access to numbered reservations or accounts. One such system also includes automatic boarding pass issue apparatus responsive to the central processor system and pass-operated boarding gate apparatus.



1

3,445,633

## AUTOMATIC TICKETING SYSTEM

Victor A. Ratner, Gaithersburg, Md., assignor to Defense Electronics, Inc., Rockville, Md., a corporation of Delaware

Filed Mar. 5, 1965, Ser. No. 437,410

Int. Cl. G07f 7/02

U.S. Cl. 235—61.7

13 Claims

This invention relates generally to an automated system for recording information and issuing transportation tickets, and more particularly to flight check-in systems for use with credit cards on a self-service basis without the intervention of a ticket seller.

A number of systems are known for automatic print-out of stored information and for recognition and recording of identification information such as might be contained on a personalized card inserted into a recording or a readout machine. Other systems are known in which punched or coded cards bear desired information to be utilized or to add to recorded information for various storage and readout purposes.

A significant need is recognized for an automated system which combines parts of these prior mechanisms into a system operative to eliminate the need for a ticket seller to avoid a long wait in line often experienced by a person boarding a plane or train where a large number of people must be passed through a single sales and confirmation check point immediately prior to departure. It is common experience that even confirmed reservations still require expensive and troublesome waiting in line, both to obtain the issuance of the ticket, and to weight and check-in any baggage incident to the trip.

It is accordingly an object of this invention to provide an automated system for passenger and baggage check-in which confirms reserved space, records information for central charge and according purposes, and issues a ticket showing the specific trip information incident to check-in.

Another object of the invention is to provide means for correlating teletyped reservation information with individual credit card information presented in a mechanized trip ticket request, and a ticket print-out upon agreement in the correlated data.

A further object of the invention is to provide a system in which a traveler having a reservation may secure a boarding pass through the operation of a computer arranged for reservation checking functions having a limited error tolerance, to give ticket print-out in response to a pushbutton request.

A still further object of the invention is to provide automated ticket issuing means including provision for variable baggage input weighing-and-computing functions with recordable output for operating a charge computer.

Another object of the invention is to provide a large capacity magnetic storage for reservation data, together with automatic means for readout and erasure of data as it is needed with means to find unused data slots for recording of new data.

These and other objects of the invention will be more clearly understood as the description proceeds in connection with the drawings of which:

FIG. 1 is a front and a back view of a typical credit card modified according to this invention;

FIG. 2 is a partial schematic front view of an automatic ticket issuing machine showing a card-punching keyboard;

FIG. 3a illustrates an airline schedule of flights from an airport;

FIG. 3b illustrates a reservation display panel;

FIG. 4 is a front view of the vending machine control panel;

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FIG. 5 shows a boarding pass in blank, automatically filled in and delivered to the customer;

FIG. 6 shows a "No Ticket" slip optionally issued when a ticket cannot be issued automatically;

FIG. 7 is a schematic wiring diagram of the system;

FIG. 8 is a schematic diagram of a variation in the system to provide a variable tolerance in data compared to card data for issuing a ticket; and

FIG. 9 is a block diagram of one form of overall system according to this invention employing magnetic drum storage.

While the specific apparatus to perform the functions called for in this combination may vary considerably, a system according to this invention employs a computer and mechanism having therein a storage element for recording each flight or trip time and destination, together with an identifying trip number and a visible display therefor, preferably in the form of a computer readout device, wherein each trip or unit to be sold is recorded in a readout logic form with visual display corresponding to the storage information. Such a system further has provision for scanning a credit card within the machine to readout recorded passenger identification and charging data in a form comparable by the machine with like information from a reservation already stored within the machine, as by teletypewriter means. The passenger selects a displayed flight or trip corresponding to the desired departure and destination and operates a corresponding pushbutton after inserting his credit card. A further button is preferably operated to indicate that baggage claim checks are desired, optionally including a registration of the number of pieces, and the machine thereupon issues baggage checks in the number punched, or in accordance with the number of times the baggage check button is operated by the customer. The issued baggage claim checks are then attached to the baggage by the customer, and the ticketed baggage is placed upon a weighing platform which totalizes the weight and indicates any degree of overweight in a visual display and records the same on the ticket, which is then issued upon operation by the customer of a baggage release button, or the like. By this system the baggage then proceeds automatically to the collection point for the trip or flight, and the passenger proceeds with the newly issued ticket to the boarding control point where the ticket is inspected for validity and conformity with flight load requirements as appropriate, and the passenger admitted to the boarding area.

Referring now to the drawings for a more detailed explanation of a ticketing system according to this invention, reference is made to FIG. 1 wherein is shown typical data included on a conventional credit card, modified for use in the present system. A credit card is generally designated at 10 and the reverse side thereof at 10', wherein line 11 is a conventional representation of identifying numbers and data concerning the person or organization responsible for accrued charges, according to a conventional credit card practice. As shown, the number appearing in line 11 identifies a corporation as shown in line 12 having a company address as shown in lines 14 and 15, issued to an individual shown in line 13. The reverse side of the card provides the signature in line 16 for the person shown in line 13, together with this individual number shown in line 17, along with the company name as shown in line 18 corresponding to that of line 12. Other data may be thereon shown, including the name of the credit organization, date of issue, month of validation, and other information as required.

At the top of the card a modification from the standard credit card is shown as comprising inked markings or punchings in four horizontal lines generally shown at 19 in a vertical space of about one-half inch. These mark-